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ABSTRACT

This document is a practicum designed to respond to concerns from both parents and staff about the duplication of instructional topics or themes in more than one grade, while other topics were not covered at all. The development of a predictable core curriculum framework for grades K-5 was one of several goals of this project to provide a predictable and consistent presentation of both science and social studies content. This report describes a committee's development of a skeleton of core topics in science and social studies. These topics were mandated to be presented at each grade level to provide predictability and consistency for instructional staff and parents. The committee developed learner or student outcomes for each of the topic areas, identifying specific content, processes and values that were believed to be prerequisites for education in the 21st century. Exemplary integrated interdisciplinary units utilizing multiple intelligence theory as their foundation were developed and acquired on some of these core topics as well as others for teachers to use for collaborative instruction and assessment. Analysis of the data revealed that the minimal core curriculum for science and social studies in the elementary grades was positively accepted by community members, parents, staff, and administration. (DK)

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Utilizing Multiple Intelligence Theory and Outcome-Based Measures to Develop a Core Framework for Science and Social Studies Curriculum Kindergarten through Grade Five

by

Vanessa C. Phelan

Cluster 43

A Practicum II Report presented
to the Ed.D. Program in Child and Youth Studies
in Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

NOVA UNIVERSITY
1994

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PRACTICUM APPROVAL

This practicum took place as described.

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This practicum report was submitted by Vanessa C. Phelan under the direction of the advisor listed below. It was submitted to the Ed.D. Program in Child and Youth Studies and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova University.

Approved:

5/8/94
Date of Final Approval of Report

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ABSTRACT

Utilizing Multiple Intelligence Theory and Outcome-Based Measures to Develop a Core Framework for Science and Social Studies Curriculum Kindergarten through Grade Five. Phelan, Vanessa C., 1994: Practicum Report, Nova University, Ed.D. Program in Child and Youth Studies. Curriculum Development/Elementary/Teacher Education/Preservice Teachers/Multidisciplinary Team/Administrative Support Systems/Leadership/Parent Partnerships

This practicum was designed to respond to concerns from both parents and staff about the duplication of instructional topics or themes in more than one grade, while other topics were not covered at all. The development of a predictable core curriculum framework for Kindergarten through Grade 5 was therefore one of several goals of this project to provide a predictable and consistent presentation of both science and social studies content.

Twelve staff members and this writer worked through a committee structure to develop a skeleton of core topics in science and social studies; these topics were mandated to be presented at each grade level to provide predictability and consistency for instructional staff and parents alike. Regular communication with the staff members throughout the process was an integral component of the plan. The Committee then developed learner or student outcomes for each of the topic areas, identifying specific content, processes and values which were believed to be prerequisite for education in the 21st century. Finally, exemplary integrated interdisciplinary units utilizing multiple intelligence theory as their foundation were developed and acquired on some of these core topics as well as others for teachers to use for collaborative instruction and assessment.

Analysis of the data revealed that the minimal core curriculum for Science and Social Studies in the elementary grades was positively accepted by community members, parents, staff and administration and subsequently adopted by the School Board. To insure continued improvement, however, shared leadership to support regular communication about and assessment of this alternative curriculum and presentation of instruction will be necessary.

* * *

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CHAPTER I

INTRODUCTION

Description of Work Setting and Community

The work setting for this project is a public school setting, encompassing preschool through eighth grade, located in a town outside of the largest city in a state that is currently well known for its tourism. It is a widespread community covering 36 square miles with approximately 8,230 residents. The town lies on the rim of a larger regional valley and is nestled at the base of one of the largest mountain ranges in New England. The area is a blend of suburban development, small businesses, office buildings and open land, with a few remaining family owned farms that have been handed down from generation to generation. Many families in the community have been here for centuries. However, the community has grown substantially in the past fifteen years with those who are eager to pursue a different way of life for themselves as well as their children.

There are approximately 1500 students in the school district, Kindergarten through Grade 8. About 594 high school students are tuitioned to area or private high schools, since the public school district does not have its own facilities for Grades 9 through 12. The community is considered socioeconomically to be middle,

upper middle class, with a few exceptions. Some families are said to live "on the other side of the tracks." A large manufacturer of business machines is one of the major employers in the area; however, early retirement packages have recently been offered to many employees. This company has been relocating families from out-of-state communities to this area within the last several months. The manufacturing plant is located in the village adjoining the school district, although some of its offices are in the town proper.

The targeted community consists of a cross-section of several groups. First, there are the students in all grades, preschool through eight, including those who might be considered gifted and talented as well as those with handicaps and disabilities. All students are heterogeneously grouped in classes, with a continuum of support services to meet individual needs. These services are provided within an inclusionary environment. Students with special needs do not need to be labeled as handicapped or disabled to receive appropriate accommodations, modifications or support services. The staff includes those who are paid workers in the school, including administrators, classroom teachers, instructional or program assistants, lunchroom workers, secretarial staff and custodians. The population involved also includes the parents of the children who attend our schools as well as other

community members who do not have children going to school.

Writer's Work Setting and Role

The writer is the Director of Instructional Programs for the school district. She is responsible for all programs for students Preschool through Grade 12 in Special Education and supplemental services that are mandated by either Federal, State or local regulation or policy. Her responsibilities also include facilitation of professional development activities district-wide, and coordination of mini-grants and incentives for program improvement via entitlement monies. In addition, she is responsible for reviewing curriculum and coordinating efforts to revise or redefine specific areas of the curriculum, Kindergarten through Grade 8.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

The school district was formed in 1978 as a result of the reconfiguration of one larger supervisory district into two smaller ones. At that time, there were no written curricular documents in place. In 1984, an assistant superintendent was hired for the purpose of creating the district's written curriculum via a committee structure in each of the subject areas. The person holding this position left the district in 1990. At that time, there were 14 written curricular documents in place. Unfortunately, the position was eliminated due to budgetary constraints, resulting in a gap in curriculum design and revision which has become more progressive over the last few years.

At the present time, there is no structured, consistent or predictable system as to when specific units or content area themes are taught for science and social studies, Kindergarten through Grade 5. When topics are taught, the content of those topics or units is inconsistent from teacher to teacher as well as from grade to grade. As a result, there is no accountability on the part of individual teachers or by the district as

a whole. Children may progress through the elementary grades either receiving a great deal of duplication of content or without having received prerequisite information in order for content area units in a given grade to progress, since a teacher may not have "taught" that information in a previous year.

Problem Documentation

This problem is documented through observations, staff and teacher input and comments as well as feedback from students, parents, community and school board members. As a part of the 1992-93 inservice days, two structured focus forums regarding curriculum strengths and weaknesses were held. During each forum, all participants unanimously felt that the autonomy that teachers in the district were given was very much an identified strength. However, that strength was also determined to be a weakness in that neither teachers nor administrators were being held accountable for the topics or content that were being presented. As a result, there was either a great deal of duplication in topics from grade to grade or some content areas were not being covered at all.

Parents as well as school board members have voiced concern to individual staff members and administrators as well as to this writer about the lack of predictability and consistency in curricular topics and areas of study from grade to grade, most specifically in

the areas of science and social sciences. They stated their frustration with the frequent repetition of themes and units at differing levels, questioning at the same time the district's efficiency and consequently instructional effectiveness if this was to continue to occur.

This frustration has been expressed by the students themselves, both directly to teachers as well as to their parents. This concern has also been identified verbally through complaints about the repetition of field trips at different grade levels. When administration and staff members discussed this with previous teachers, thematic and content area repetition and related field trips was indeed confirmed.

Causative Analysis

There appear to be several causes for the lack of predictability and consistency as to when and/or what specific units in science and social studies are taught in the elementary grades. The current written curricula in science and social studies span many topics and concepts over a period of several years. All of these topics cover several grade levels, since the original intent was to introduce some concepts perhaps at an earlier grade and to then work with each of them in greater depth at a later time. Since teacher autonomy has been highly valued, teachers have been given total flexibility regarding when and what to teach in these

content areas. This has consequently lead to inconsistencies in topic instruction for students within the district system.

It is also clear, however, that the amount designated at each grade level is overwhelming for any teacher to complete in depth in any given year. For example, within the science curriculum for Grade 3, the concepts of ecosystems (in ponds, streams and forests); heat, light and sound; earth and space science; and water and land cycles are all identified for instruction. To instruct and facilitate the teaching of these topics in-depth in one year would be impossible, especially when one considers the need to cover other instructional areas as well, such as language arts, math, social sciences and health, even if an integrated interdisciplinary approach is used.

In addition, the record keeping and reporting system currently in place does not provide for teachers or parents a vehicle to gain the information needed to assess what content has been taught to students in previous years. The fact that there is no mandated core of topics in these content areas simply makes this task even more difficult.

Relationship of the Problem to the Literature

A review of the literature indicates that schools are not teaching enough of what needs to be taught. Concepts such as self esteem have taken the place of

understanding as the goal of education; the goal of schooling has moved from an instructional and intellectual emphasis to a more political one (Kramer, 1991). Hirsch (1993) states that there is no longer a common body of information taught in our schools which ultimately constitutes the foundation of our cultural literacy. Studies by Ravitch and Finn (1987) revealed that only 54.5% of 17 year olds identified gave the correct answer to the average history question (eg. When was the Civil War?). In literature, the average score to questions pertaining to novels and novelists was 44.9% (eg. In which novel did a 16 year old boy who was expelled from school go to New York City for a weekend to find himself?). Hirsch (1993) argues that children aren't learning because they are not required to know anything; he challenges what he believes American schools have become, skill factories with vague requirements (such as "identify and use maps and globes" instead of "know and identify the seven continents"). Interestingly enough, many of the country's public schools require less of their students than the United States Immigration and Naturalization Services requires of candidates for citizenship (Meyer, 1992). Content has been trivialized and, as a result, accountability for schools and educators has been ignored (Kramer, 1991).

According to Hirsch (1993) and Ravitch and Finn (1987), having the same background knowledge that others

have of mainstream culture is prerequisite to being a working member of society. Access to the best knowledge available is necessary for young people to understand the issues, maintain an appreciation of racial and cultural differences, express varying viewpoints and to then think and act accordingly. It is clearly important to present this core knowledge within a framework that does not simply require students to know facts. Insuring the consistent acquisition of information and demanding its application within skills that demand higher order thinking and problem solving strategies must be a priority (Hargreaves, 1989; Shoemaker and Lewin, 1993; Taylor, 1993). Helping students learn how to learn and integrating this information into societal contexts should be emphasized (Gardner, 1993; Martel, 1988). According to Newmann and Wehlage (1993), current instruction presented to students often has no intrinsic meaning or value to those students beyond achieving success in school. The work that students do oftentimes does not challenge them to use their minds. Students as well as educators need to understand that it is of prime importance to acquire and process information more effectively and understand that "less is more" (Association for Supervision and Curriculum Development; Borland, 1986; Jacobs, 1989; Taylor, 1993).

The literature identifies several causes for the lack of core knowledge within our schools' current

curricula. According to Holdren and Shutz (1993) as well as Parker (1991), many curriculum guidelines do not designate a solid foundation of knowledge that is considered to be crucial to developing a future citizenry who can apply what was learned from the past to a vision of the future. Chase (1991) and Howard (1993) state that schools have offered a great deal of rhetoric about the need to restructure in order to develop alternative educational outcomes on behalf of our students, but in reality, the structures and outcomes have yet to change. Fullan (1982) feels that a part of this failure to change is due to faulty assumptions and ways of thinking about change; for example, an outcome may be described without any feasible concrete plan on how to achieve it!

Both Hirsch (1993) and Jacobs (1989) state that the current emphasis on integrated curriculum had good intentions, but staying power was lacking, since many units only sampled knowledge from each discipline, resulting in a lack of focus and a watering down of content. Many interdisciplinary approaches have been criticized since they concentrate on the number of units or topics taught and not on in-depth knowledge (Grun, 1991; Hellemans and Bunch, 1991; Hirsch, 1993; Taylor; 1993). Interdisciplinary curricular experiences provide an opportunity for a more relevant, less fragmented and stimulating experience for students. Yet students

cannot fully benefit from interdisciplinary studies until they acquire a solid grounding in the various disciplines that interdisciplinarity attempts to bridge (Jacobs & Borland, 1986). Specialists in the Department of Education and Science have argued that the result has been that curricula in primary schools, both for individual subject areas and as a whole, have had insufficient coherence, breadth and balance and that not enough attention has been paid to continuity and progression (Nias, Southworth & Campbell, 1992).

Philosophical extremes between discipline-field emphases or interdisciplinary orientations have therefore created mutually exclusive "either-or" arguments, resulting in lack of movement toward improvement of curriculum for the benefit of students (Hargreaves, 1989; Jacobs and Borland, 1986). Different factions of the educational community have supported either an integrated interdisciplinary approach to instruction or a discipline field specialization. It is not that easy, and it is certainly unethical to assume that only one approach will support all students to allow them to reach their full potential. It is necessary to constantly examine instruction and determine if it makes intellectual and practical sense to integrate certain parts of the curriculum, while keeping the content and the knowledge intact and well developed. A balance needs to be struck; this state of

the art in instruction today is a complex picture (Piaget, 1972; Perkins, 1991; Taylor, 1993; Shoemaker and Lewin, 1993; Spady, 1984).

Curriculum integration is not necessarily the best way to design and implement curriculum as some curriculum should be integrated and some should be subject-based (Glatthorn, 1992). Curriculum development, implementation and assessment may also be suffering from teachers' inadequate background in any discipline field, according to Kramer (1991), Longstreet and Shane (1993) and Parker (1991). In addition, allowing teachers excessive autonomy has created massive inconsistencies among schools in the same district, resulting in widespread mediocrity and incompetence alongside occasional excellence (Hargreaves, 1989). Individual autonomy to an extreme also impacts on the "spirit of collaboration", an institutional value with a commitment to insure delivery of what is best for the student population as a whole (Nias, Southworth and Campbell, 1992).

According to Gardner (1993), Taylor (1993) and Templeton (1991), the type of instruction in school has also been inconsistent with the ways in which young people learn. Teaching has treated students as if their minds were empty and needed to be filled with new information, resulting in a distinctive gap between teaching and learning or true understanding (Gardner,

1993). Classroom instruction is either very linguistically-based or supports learners whose strength may be in logical and mathematical reasoning, rarely tapping other learner styles or intelligences. When presented with scenarios of student profiles who were identified as exhibiting diverse patterns of giftedness or talent, the majority of teachers surveyed predicted that those with motor or creative arts skills would not be as successful as those with verbal, analytic or social skills. In these cases, teachers were exhibiting a clear tendency to stereotype abilities (Guskin, Peng, Simon, 1992).

Schools' calendars and the legal mandate to keep students in school for fixed periods of time have also promoted curriculum coverage instead of student mastery and 'true' understanding (Gardner, 1993; Spady, 1988). What students learn, when they learn it and how well they learn it are determined by a schedule of 175 to 185 days in a school year as well as by patterns of assignments within departmentalized structures in programs. Flexible groupings, schedules and lengths of coursework must be instituted in order to provide for students' instruction when they can best benefit by it.

CHAPTER III

ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

The goal of this project was the development of a structured, consistent and predictable framework of core topics in social studies and science in Kindergarten through Grade 5. These core topics would use multiple intelligence theory as the foundation for generating discussion and development of objective student outcomes and integrated interdisciplinary units for the designated core areas.

Expected Outcomes

The expected outcomes for creating a predictable framework of core topics and developing samples of interdisciplinary units were multiple. Teachers, administrators and school board members would have a predictable system from which to be held accountable for content material. It was hoped that this framework could then be used as a "common ground" and a catalyst that served to create a community of purpose, consequently leading to developing greater cooperative and collaborative efforts among staff members. The hope was that this collaboration would involve direct

discussion regarding the development of alternative methods and processes used to instruct students which match their individual style or intelligence so as to insure that each and every student had the appropriate environment to reach his or her potential.

In addition, parents, teachers and students would have greater predictability in their understanding of the mandated content of topics that would be taught. This predictability for some topics would allow flexibility for greater school-community partnerships. Parents would have the ability to assist their children in the school's efforts in providing experiences which would be supportive of what their child would be learning within these thematic units. Since duplication of core topics would be minimized, duplication of field trips was not likely to occur. As a result, parents would feel a greater sense of security and support for the educational programming efforts in the schools.

Most importantly, all students would have a common core of content that they had experienced in Grades K-5. This framework would mandate content topics to insure consistency within a structured predictable framework. It was also anticipated that common values and processes would be a part of each unit presented, no matter the grade level. The integration of topics would occur whenever possible to insure that connections were made across disciplines. As well, multiple intelligence

theory would provide the philosophical basis for the development of units, using the core framework and designated outcomes as the foundation.

Measurement of Outcomes

A predictable and consistent framework of core topics in science and social studies was developed in kindergarten through fifth grade. The framework itself was identified and accessed easily on one page of the overall document. This was unlike previous curricular documents, which had been somewhat cumbersome and lengthy, making reference for teachers difficult. The document itself outlined the importance of values and processes in addition to the content designated, impressing the reader, as well as the user, of the need for a balance among all three areas.

Teachers and administration evaluated the development of the minimal core framework and designated outcomes through staff questionnaires, focused discussion during staff meetings as well as informal feedback. In addition, since the work of the committee was presented to the school board, feedback from the board as well as community members during the meeting was recorded.

The district's written philosophy and vision statement emphasized the need for communication and stronger partnerships with the home. Documentation of the original problem was a result of feedback from

parents and community members. Therefore, parents were informed of this curricular change and were asked for feedback about the recommendation. This feedback was requested through written surveys that were distributed at the board meeting as well as in the waiting areas of each of the schools at the end of this project's completion.

Sample interdisciplinary integrated units, identifying topic specific outcomes and using higher order thinking skills and multiple intelligence theory as the foundation for instruction were developed and/or acquired as a part of this project. This allowed teachers to use these units for their instruction and lesson plans. The units were used for collaborative discussion about instructional methodologies and presentation of content among grade level teachers. This writer planned to attend a random sample of grade level and/or team discussions for the expressed purpose of obtaining evaluative feedback about the effectiveness of these units for day-to-day instruction.

CHAPTER IV

SOLUTION STRATEGY

Although teacher autonomy and flexibility has been highly valued in the district, it has, in part, resulted in lack of a structured, consistent or predictable framework as to when specific topics are taught for science and social studies, Kindergarten through Grade 5. When topics were taught, the content often varied from teacher to teacher as well as from grade to grade. The need to develop a core framework of topics and designated student outcomes was therefore of extreme importance.

Discussion and Evaluation of Solutions

This project was a challenging one, since it involved a great deal of district history as well as many varied personal and professional philosophies. There would be several overlapping solutions that would be a part of the overall plan for developing a consistent and predictable framework of core topics as well as designated student outcomes in social studies and science, Kindergarten through Grade 5.

It has been felt by many (Kramer, 1991; Newmann and Wehlage, 1993; Taylor, 1993) that superficiality can be reduced by deemphasizing coverage of large quantities of

fragmented information and sacrificing quantity for quality. Curricular documents in this district have been examples of this, identifying a great many topics at each grade level. Coverage of this vast amount of material is an almost impossible task for any teacher to do well, even the most talented and invested. Instruction must be concentrated on a limited number of core learnings if it is truly to be understood and used in the future (Parker, 1991). A successful project would identify a limited core of developmentally appropriate topics in science and social studies that teachers would be held accountable to teach in-depth, identifying content as well as lifelong learning standards. According to Gardner (1993), we must embrace the belief that "less can be more."

Knowledge itself must be at the center of the educational enterprise, according to Kramer (1991). Hirsch (1993) states that a coherent and in-depth focus on content leads to higher order thinking skills more securely than other approaches. If a student is to "understand deeply", he or she must become immersed in the subject matter, learning to think about and approach it in a great number of ways (Gardner, 1993). By limiting the number of topics in designated content areas, teachers would have the ability to concentrate on designated themes more intensely to further develop those skills with students. Parker (1991) discusses the

need to insure that important subject matter and information is taught, and that it is done through thought provoking processes and with a commitment to the education of a democratic character for our students. This knowledge must be integrated as well with the social implications of society's challenges, such as the earth's ecology, food production and world population and cooperation (Longstreet & Shane, 1993; Ornstein & Hunkins, 1993).

According to Kramer (1991), institutions need to be essentially academic and raise their standards. Teachers as well as students should be judged on how much they know, not simply on how much they care. If our teachers neither possess nor respect knowledge themselves, how can they provide for their students an enthusiasm for that knowledge and the power that it can bring? Teachers' backgrounds in content areas correlate positively to students' achievement in those same fields. Therefore, gaps in curriculum must be honestly identified with strategic plans for improvement of both personnel as well as structures (Longstreet & Shane, 1993). In this same effort, the district would assess its needs as a core framework is developed in order to identify professional development challenges for teachers and provide support. We live in a society in which there is a great deal to learn; we must know something well and be able to teach it effectively.

Inservice training and professional development and education of the adults who surround children is therefore of necessity (Gardner, 1993; Hargreaves, 1989; Howard, 1993). Teachers must be allowed, encouraged and required to go to other classrooms and schools and into regularly scheduled meetings with colleagues (Hargreaves, 1989).

Perhaps prerequisite, however, are the attitudes of the adults in the realization lifelong learning is a necessity, not only because it is a joy and a delight, but, more importantly, because it continues to provide for children experienced and knowledgeable facilitators in their own education (Templeton, 1991). The climate of the school community, as well as the adults who are a part of it, must be perceived as open to question and capable of improvement (Nias, Southwell & Campbell, 1992; Nyland, 1991). A vision, a community of purpose or a sharing of the same beliefs, is prerequisite to positive restructuring and true progress in behalf of the students for whom we are responsible (Fullan & Miles, 1991; Sambs & Schenkat, 1990). It is necessary that expanding the repertoire of strategies for teachers would not only benefit ourselves as adult learners but, most importantly, the children we teach (Harrison & Bramson, 1982).

Since each of us cannot know everything well, we need to depend and work with others collaboratively to

insure that this wealth of information and the interrelatedness of that knowledge is shared and used effectively. It is a contradiction that what is often done in school is work that is focused on the individual, including individual problem solving and individual cognition (Brown, 1991). Yet, when a student gets out of school and into the workplace, almost everything that is done happens collaboratively. Education and those who work within it must change, perhaps both professionally as well as personally, in order to become more consistent with "the real world." We must also go a step further and be as intellectually creative and dramatically evolving as is the world in which we currently live, both in school and in everyday life (Chase, 1991; Hargreaves, 1989). Peer coaching and mentor systems for adults who teach and educate are equally as important as the same methodologies for students. A part of the plan for this project would be to work together to determine how this could most effectively happen in the district as it relates to the core framework and the development of innovative curriculum.

Jacobs (1989) contends that there needs to be both interdisciplinary and strong discipline-field perspectives in the design of our curriculum for the future; either approach exclusively is inappropriate (Glatthorn, 1992; Hargreaves, 1989; Harrison & Bramson,

1982). Subject or pure discipline-based emphases would strengthen teachers' content identities and deepen divisions between them. On the other hand, offering integrated units which appear relevant but have little intellectual rigor or challenge would not be giving to our students the tools with which they need to function in the future. The "balance" between understanding a specific body of teachable knowledge with its own background and history as well as a continuum of approaches that applies language and methodology from more than one discipline to examine a central theme or issue would be optimum. This knowledge could then function and be applied actively in problem solving, creative and reflective thinking as well as critical thinking, both in school and in everyday life (Marzano & Costa, 1988; Perkins, 1991). For this project to be successful then, it would be important for inservice training and workshops to be provided to begin to build these new and alternative skills in those who deliver instruction to children.

Incorporating apprenticeships and mentoring programs into curricular designs would build most effectively on the ways in which young people learn, according to Gardner (1993) and Kramer (1991). Identification of "exit" or "learner" outcomes, or objectives based on desired changes in the learner, would be able to be designated within these designs

(King & Evans, 1991; Redding, 1991). Learner or student outcomes would be defined more specifically after a core framework of topics was developed as a part of this proposal. By focusing on outcomes, it would be the designated objectives or standards and not the calendar or curriculum coverage that determined student understanding and consequently success (Marzano, Pickering & McTighe, 1993; Spady, 1988). Such efforts would be effective since all activities would pertain to final products or performances that have been proven to be valued within our society. As well, as different levels of achievement were attained, students could see where they had been as well as where they continued to go. It would be necessary that support from many, including educators as well as persons in libraries, museums, recreation departments, private industries and galleries be drawn into the mainstream of education where what may have previously been only imagined or described would become real (Chase, 1991). According to Gardner (1993), the key would be to contemplate and analyze material from as many different angles as possible, utilizing any and all of the multiple intelligences possible. Educators must acknowledge the existence and power of any and all ideas.

Out-of-school learning is becoming more legitimized, where many processes are learner-centered, not school, teacher or book-centered (Templeton, 1991).

Life itself is such a rich environment for learning; to pass it off as "non-educational" in the traditional sense would be absurd and, to some, unethical. With the increasing recognition of the fact that traditional measures of intelligence assess only a few of one's thinking abilities (Gardner, 1993; Taylor, 1992; Torrence, 1976), altering environments to "fit" a learner's profile or intelligence has tremendous merit. A variety of contributions and achievements within the instructional effort need to be rewarded; recognizing the value of those different talents is of absolute necessity (Gardner, 1993; Torrence, 1976). The responsibility for altering educational systems therefore belongs to everyone; to point the finger at educators only is contributing to the problem, rather than attempting to work toward a more communal solution (Fernie, 1992).

Description of Selected Solution

The potential for success of this proposed plan was high, since there were many who were frustrated with the duplication of topics, the superficiality of some content presented and/or the total lack of instruction for some content units. These individuals therefore felt strongly about the need to redefine the current science and social studies curricula and target core topics in those content areas that all teachers were responsible to teach at their designated grade levels.

Although it was controversial, since a degree of teacher autonomy initially appeared to some to be lost by mandating a minimal core framework, the necessity to provide a predictable and systematic foundation or skeleton for the district and ultimately its students as well as their parents was considered of major importance.

A group of teachers representing Kindergarten through Grade 5 and this writer worked together to determine the barriers that were to be overcome in order to accomplish the goal of providing a skeletal core of content area topics. This group focused on only six grade levels instead of the nine in the district. By starting small it was hoped that there would be a greater insurance of success based on a more closely coordinated plan. Only those interested in working toward this goal were intensely involved in the commitment of time and effort. Requests and need for feedback and input from others throughout the process occurred as well in an effort to insure that this project achieved long-term success.

It was important that the final product explained the balance between "content", "processes" and "values" and integrated it philosophically into the mission statement of the school district. Equally as important was insuring the development of integrated interdisciplinary units from the framework and student

outcomes developed, utilizing multiple intelligence theory as their foundation, since there were some staff members who were interested in piloting multi-age primary units with this theoretical premise in mind but who were initially wary of the mandate of teaching core content topics. Ultimately, through the success of this project, the foundation for greater accountability for instruction within the district has been developed as well as a basis for greater collaboration among staff to share ideas about varying methodologies and assessments of the same.

Report of Action Taken

A structured and sequential plan was initially developed with a mission in mind, that is, to develop a minimal core framework of topics in social studies and science in Kindergarten through Grade 5 (K-5) with designated student outcomes and sample interdisciplinary units utilizing multiple intelligence theory as their bases.

Information about the plan to create a K-5 curriculum committee was disseminated to all staff, from kindergarten through fifth grade. The formation of such a committee was discussed previously at one of the weekly administrative team meetings. The writer informally spoke with individual staff members in Kindergarten through Grade 5 to recruit committee members who had similar goals. After discussion at the

building levels about the importance of this committee, principals allowed staff members to leave other committees and join this one, if they were interested.

The committee membership was made up of 12 members, including regular classroom teachers representing first through fifth grades (either via single grade or multi-age configurations) as well as special services teachers. After the curriculum committee was selected, three organizational meetings for the committee were held. The Committee devoted itself to meeting weekly in order to insure maximum progress. All participating staff members realized the potential of this committee becoming sidetracked, since future recommendations suggesting possible changes for individual staff members as well as district procedure regarding accountability might be controversial. By meeting regularly, the momentum could be maintained and focused discussion regarding questions and concerns could occur. A review of information gathered from the previous Orientation Day in the district (see Appendix A) as well as information from two focus forums on curricular overlap that had taken place on a subsequent inservice day (see Appendix B) was completed. During the first meeting, this writer was appointed the chairperson.

The rules of conduct for committee meetings were also reviewed (see Appendix C). The history of the rationale behind the formation of this committee was

discussed and ways to communicate committee progress to others designated. In addition to informal communication among staff members and colleagues, it was decided that minutes of every meeting would be written, distributed to committee members and the administrative team as well as posted in each staff room of all buildings in the district in order to insure maximum communication. As well, committee members reported out intermittently at their building-based staff meetings.

A survey for all classroom teachers was developed based on the identification of the weaknesses of the current curricula and Orientation Day and focus forum information as well as general perceptions of current instructional practice (see Appendix D). The goal of this survey was to either confirm or contradict the original findings of the committee regarding curricular overlap and duplication of content and accountability procedures currently being done by staff and administrators. As had been discussed and agreed to via the committee structure, this writer randomly assigned committee members to personally interview other staff members at their designated buildings, using the survey itself as the vehicle for accessing information; building level principals were informed as well. All classroom teachers in grades Kindergarten through Grade 5 (43 in total) were either personally interviewed

and/or provided information to the committee via this survey.

This survey information was then distributed to committee members (see Appendix E) and discussed among committee members. From the survey results, gathered either through personal interview or through written feedback, it was clear that there was a great deal of repetition of topics. For example, the topic of "animals" had been mentioned in all grades levels Kindergarten through Grade 3. The number of topics identified at each grade level was significant, implying that these topics could only be covered superficially, since there was limited time during the school day or the school year! This implication was therefore consistent with feedback from previous forums and parent statements regarding repetition of topics as their children moved through progressive grade levels.

The committee worked together to develop an initial draft of a core framework of topics in science and social studies for Kindergarten through Grade 5. A modified Quality Circles approach was used to facilitate large group discussion and to insure continued progress toward its goal. Both formal and informal discussion of current research regarding discipline-field curricula as well as interdisciplinary curriculum development became a part of the weekly meetings. Committee members chose to use a full district inservice day to continue its

work more intensively in order to make more rapid progress. Subsequently, an initial draft of the core framework was disseminated to all faculty and staff K-5 for comment and input. Staff were asked to respond either in writing or in person to any of the Committee members (see Appendix F).

The curriculum committee reviewed both formal and informal input on the initial draft of the core topics. It was clear that there would need to be some revisions since the feedback was strong and included the following:

- Some topics at each grade level were too narrowly focused (i.e., domestic animals in Kindergarten, zoo animals in Grade 1), thereby restricting a true in-depth discussion of any particular topic. As well, this restriction was not consistent with providing instruction to a wide range of developmental levels within each classroom (i.e., what would happen if a gifted or precocious child in Kindergarten had an interest in habitats of forest animals, a topic that had been designated to be covered in Grade 3, according to this original draft?) According to our district's philosophy, restricting the child from knowing would not be tolerated. These concerns were also echoed

within the topics of "Human Body" and "Water".

Work continued and a final draft of the core topic framework was completed in less time than expected, since committee members once again felt the need to "do ove time", blocking several hours during two afternoons and evenings to finalize this phase of the project. The framework included one topic in social studies and two topics in science for each grade level Kindergarten through Grade 5.

A district-wide staff meeting was then scheduled and held to review the original charge of this committee; review the original documentation of the existence of the problem, that is, duplication of content area themes and/or the lack of instruction in specific content areas; and review the final draft of the minimal core framework, with some beginning thoughts on the core topics' content as well as possible professional development needs. A copy of this information in writing was distributed to all staff members before the meeting so that they would be able to reflect upon its content before the actual staff meeting itself (see Appendix G). A questionnaire was distributed (see Appendix H) for gathering additional written feedback and questions which were not answered at the meeting because of time constraints.

During this same period of time, this writer was also involved in coordinating a week-long training with a well-known expert in the field of curriculum development and redefinition using multiple intelligence theory as a part of its development. The trainer, originally from the suburbs of Chicago, was planning to be in the immediate area to provide an intensive seminar to any interested educators in the region. Unfortunately, only two members of this committee were interested in attending; three other staff members signed up to attend as well. Materials were purchased and registrations were coordinated.

The curriculum committee discussed results of the district-wide staff meeting and made modifications to complete the final document of the science and social studies minimal core curricular framework. Some staff members were concerned that the original document emphasized only content and no processes or thinking skills that would be prerequisite for children to succeed in the future. In addition, many stated that there was no philosophical or conceptual introduction to the framework. Some stated that specific goals for the core topics were not designated.

A philosophical overview was developed, defining each and discussing the necessity of maintaining a balance among the areas of "content", "processes" and "values", since all three areas were equally important

if our children were to succeed and compete in the future (see Appendix I). This interim document also included written answers to questions or concerns submitted at the staff meeting or immediately after, including the fact that this was just the initial phase of the new curriculum; student outcomes or learner goals were yet to be developed! This document was then distributed to all staff Kindergarten through Grade 5.

Two members of the committee, including this writer, and three other staff members, also participated in the week long training seminar with an expert during this time. A integrated interdisciplinary unit was developed for Grade 2, utilizing the topics of 'electricity' and 'community' from the K-5 minimal core framework (see Appendix J). The unit itself used an outline recommended by the trainer that incorporated multiple intelligence theory within its development as well as activities emphasizing higher order thinking and problem solving processes.

The timeline for a plan of an interim presentation to the school board regarding the committee's work was also discussed. It was felt that the final date could not be established until the training was complete and feedback from those on the committee receiving the training could occur.

Four months into the practicum implementation, the committee met to plan the school board presentation

regarding the final document of the K-5 core curriculum framework in science and social studies. At that time, three members of the committee stated that they would be reluctantly resigning from the committee after the school board presentation. They stated that they thoroughly enjoyed and were challenged by the work that had been done thus far, but that they were concerned about the intensity of time devoted to the effort thus far. They were aware that the committee's work was not yet done, since specific student or learner outcomes for each of the core topic areas were yet to be completed.

The presentation to the school board was made; its content included a review of the original identification and documentation of need, research review and current recommended framework. A review of the seminar that had been completed with the trainer, its philosophical foundation and research premise behind this method of rewriting curriculum (using the unit developed) was reviewed. The presentation was very positively accepted by the school board as well as by those community members in the audience. School Board members applauded the effort to improve systematic accountability and predictability, as well as consistency for students and their parents. One community member was particularly excited about the unit that had been developed, praising the alternative format for maximizing all students' varying learner styles or intelligences.

After the school board's acceptance of the committee's work, a memorandum was sent to all staff Preschool through Grade 5, informing them of the board's decision to accept the recommendation of a pilot period of time for the implementation of the minimal core framework and thanking all committee members for their work thus far. This memo also informed staff that student outcomes were in the process of being developed and sample interdisciplinary units for core topics were being gathered for reference by all.

Student outcomes for each of the core topic areas were developed, utilizing the same framework that had been designated as the overview for the minimal core curriculum, that is, maintaining the balance among "content", "processes" and "values". In order to make the task more efficient and to prevent additional members from withdrawing from the committee, this writer created a draft of those outcomes for each of the topic areas, using the trainer's framework as well as other related research and conceptual initiatives as the foundation for their development. Committee members then worked on redrafting those outcomes during weekly meetings; once again, members chose to spend additional time (after school until approximately 7:30 PM) during three of those weeks to work more intensively on these redrafts. One minor change to the minimal core framework was made after members and other staff felt that the

Grade 2 topic outcomes designated for the topic area "Electricity" were too difficult developmentally for children that age (see Appendix K). As a result, this topic area was designated as "Batteries, Bulbs and Static Electricity".

During this same period of time, this writer networked with many others who participated in Dr. Taylor's seminar to acquire exemplary units that matched the topic areas designated within the core framework. In addition, other units that were consistent with topics that were being done either outside of the core framework or at the Middle School level were obtained to serve as a foundation for further collaboration and communication regarding the application of multiple intelligence theory and higher order thinking skills in practice within the classroom.

The final version of K-5 minimal core curriculum overview, topic framework and developed outcomes for each of the core topic areas for science and social studies were disseminated to all staff, Kindergarten through Grade 8, to insure communication district-wide. An organized notebook with copies of the framework and outcomes as well as samples of integrated, interdisciplinary units obtained were placed in each of the three school buildings in the district for all to reference, specifically, the Principals' offices, staff rooms and Learning Centers (see Appendix L). Evaluation

questionnaires were distributed to staff at this same time regarding the final document, asking for final input and reflections regarding its content and organization (see Appendix M).

A follow-up presentation to the School Board also occurred for its final approval as well as to gather input from its members and community regarding the content of the final document and perceptions. Evaluation questionnaires for parents and community members were distributed during this meeting (see Appendix N) to gain additional feedback.

CHAPTER V

RESULTS, DISCUSSION AND RECOMMENDATIONS

The goal of this project was the development of a structured, consistent and predictable minimal framework of core topics in social studies and science in Kindergarten through Grade 5. These core topics would then use multiple intelligence theory and other research reviewed as the foundation for generating discussion and development of challenging student or learner outcomes and integrated interdisciplinary units for designated core topics.

RESULTS

The expected goals of creating a framework of core topics, developing challenging student outcomes and coordinating a resource bank of interdisciplinary units has been accomplished. As a result of this project, teachers from Kindergarten through Grade 5, administrators and school board members now have a more predictable system from which to be held accountable for not only content material but specific processes and values or lifelong learning standards that are felt to be of vital importances for our students to succeed in the future as well (Brandt, 1994; Marzano, Pickering

& McTighe, 1993; Taylor, 1993; Vermont Common Core of Learning, 1994).

The development of a minimal framework of core topics at each grade level for which teachers would be responsible for in-depth instruction was a novel concept for the district. The goal that teachers would not concentrate on topics that would be covered in future grades in order to minimize repetition, but that later grades would be able to review topics that were covered in previous grades, if appropriate, was threatening to some. Although teaching other creative topics outside of this "minimal core" was encouraged, respecting this minimal core framework was of utmost importance if some cohesive and predictable framework for teachers, students and parents was to serve as a vehicle of communication and structure for the system itself.

This phase was probably the more controversial one during the implementation of this project. Teachers were being <u>told</u> that they could not do their favorite topic or theme if it was a part of the curricular framework in later grades; they were not being <u>asked</u>. The collaborative committee structure that served as the backbone of this project was a powerful vehicle to communicate with others about current research, the goals for the redefinition of the science and social studies curricula and the consistency of those goals with the district's philosophy. Individual committee

members were able to speak informally with many staff members about their concerns on a regular basis; they were then able to use other committee members as a source of strength during regular weekly meetings. Consequently, the committee structure served as a way to "reenergize" members through their participation and their common mission to develop an alternative curricular document. Without this collective energy and vision of committee members, the project's potential for success would have been minimized.

The second phase of this project was an initial effort to move to outcome-based standards, providing more specificity than ever before in this district in the area of cultural literacy skills as well as application and use of those skills. Once again, this was a novel concept in the organizational framework for curricular development for staff members. However, most believed in the philosophical premise behind development of these outcomes and accepted them conceptually.

Finally, training in the development of integrated interdisciplinary units using multiple intelligence theory as its foundation was felt to be one of the most exhilarating experiences by participants. The creation of such a unit that matched two of the topics in the curricular framework provided activities that not only supported the development of students' basic knowledge as well as higher order thinking skills but also

"tapped" the seven intelligences (Gardner, 1993). With relative ease, participants developed activities and ideas for potential products which matched linguistic and logical-mathematical intelligences, since school curricula have emphasized these areas historically. The creation of activities emphasizing spatial intelligence (i.e., "create a prototype of something that is not electrified but that you would like to see electrified"), musical intelligence (i.e., using a framework from a song already known, create a new song about a holiday without electricity in your community") or bodily-kinesthetic intelligence (i.e., "dramatize the flow of electricity through a light bulb) was more difficult, however (see Appendix O). The implications for meeting the needs of most if not all children within a classroom setting using this type of instructional framework were significant and clearly realized by those participants in the training.

At the completion of the project timeframe, there were no completed forms returned to this writer from staff, although verbal feedback from each of the buildings was positive. During discussion with staff Kindergarten through Grade 5, those who spoke were supportive of the predictability of the framework as well as the learner outcomes and standards that were designated. Some spoke to the need to continue to

maintain a connection with national and state initiatives regarding standards that were being developed at those levels to insure a match among all. Staff members were also delighted with the reference notebooks of exemplary interdisciplinary units which matched many of the topics identified within the core framework (see Appendix L).

There was only one form returned from the community. The feedback in writing from this person was supportive of the core framework and identified outcomes to provide consistency and predictability for students grade to grade as well as to develop greater partnerships between parents and school personnel. This person was also supportive of the outcomes designated which challenged students to consider the environmental implications of many of the changes that we have or will experience, either historically or scientifically.

Both formal and informal discussions with community members indicated similar results. The presentation made by this writer at the end of the project with the School Board resulted in many comments from those in attendance, particularly regarding the district's goals to challenge students to evaluate and place value on the knowledge and the information that they gained (that is, the use of higher order thinking skills in a variety of contexts). It appeared that those who appeared ambivalent understood the rationale behind having such

goals for our students intellectually, but were unsure of the result if the "values" that the students developed were not the same as the "values" that their parents might already hold!

Discussion

Curriculum development and assessment have always been controversial topics, but even more so at the present time, with the significance of the changes within our schools as well as society. As a result, alternative ways of looking at curriculum that are challenging as well as assessments of students utilizing that curriculum are of primary importance. At the same time, however, logistics and cultures of the school systems within which these curricula are managed must be considered as well, and a balance between innovation and systematic organization must be struck. New curriculum designs within schools that are in the process of restructuring need to encourage innovation in behalf of quality and the development of challenging standards but, as well, bring coherence to students' learning as they move through the school system (Cornell & Clarke, 1992; Tucker, 1992).

Throughout the weeks of this project, the staff members who were the most concerned about the Committee's activities were those who appeared to be at one or the other philosophical extreme of emphasizing either interdisciplinary orientations or

discipline-field or content based instruction (Hargeaves, 1989). As is the case in most larger systems, there were a few who did not approve of the change, simply because they 'didn't like it', behaviors that have been proven to impact the overall effectiveness of curricular changes and restructuring efforts (Hargreaves, 1989). It is felt that a balance has been struck through this effort, that is, integrating innovative curriculum when appropriate, yet insuring a strong foundation of knowledge and cultural literacy as a springboard to develop a platform for its application through problem solving and higher order thinking skills activities (Hirsch, 1993; Shoemaker and Lewin, 1993; Taylor, 1993).

There is no doubt that more is being expected and required of both staff and students alike through this project. The emphasis on insuring that a common body of information is taught within our school district will assist in providing consistency and predictability for students, teachers and parents alike. We do not have the time to create inefficiencies for our children through repetition of topics or content from one year to the next. We also have the responsibility as educators to insure that our students have a similar background foundation of information as other students in the world to compete and communicate globally (Hirsh, 1993; Kramer, 1991). With that background foundation of

knowledge and deeper understanding, learning becomes a challenge to use that knowledge in a number of different ways, leading to the development of more abstract thinking skills and thought provoking processes (Gardner, 1993; Longstreet & Shane, 1993; Taylor, 1993). We must, however, balance the need for threads of consistency with the challenge to increase innovation among teachers and their instruction to our students. The learner outcomes identified in each of the topic areas within the framework are truly complex standards which require the application of a great deal of knowledge and many skills, both for teachers and students alike! Continual professional development is of prime importance. The actual instruction that occurs is the vehicle for applying the content, processes and values in any variety of different constructions and consequent assessments of student work, insuring the interconnectedness among facts, processes and products (Cornell & Clarke, 1992; Shepard, 1989).

During the different phases of the project, a few staff members expressed anxiety with the fact that some content was knowledge that they were unfamiliar with. Most were honest with the concern that they did not have the background in some of these areas to feel comfortable with instructing students and achieving the challenging outcomes that were identified. On one hand, this writer felt positive about such honesty, since it

then becomes the responsibility of any system (in this case, the school district) to support these teachers through professional development activities, not only in content acquisition but, perhaps more importantly, in building collaborative cultures where these teachers could learn from their peers to share their strengths with each other. Hargreaves and Fullan (1991) argue that working collectively in schools is the best way to improve them. While we restructure schools and look toward teaching our young people how to work together through peer coaching and mentoring systems, the same goals and methods should apply to those adults who are also learning! Peter Vaill (1989) points out that "working smarter" does not mean working longer, but requires shifting our habits of work "collectively, reflectively and spiritually."

This project has begun that effort in developing greater cooperative and collaborative efforts among staff members. In order to maximize our time and "work smarter", the initial bank of innovative and exemplary interdisciplinary units has been organized and made available to staff members (see Appendix L). With a multitude of resources within these units as well as examples of varying instructional methodologies which "tap" the multiple intelligences or learner profiles, teachers can focus their time on discussing these processes as well as ways to assess their effectiveness.

One of the Committee members has taken a leadership role in working with the building principal to replace one of the weekly staff meetings with a "collaboration meeting", where grade level teachers can meet to discuss instructional methods, shared curricular concerns and brainstorm possible solutions or interventions. Although this is relatively new, staff members have applauded the effort and have appreciated the priority placed on that time; risk taking in this more supportive environment has been supported and a common vision of school improvement placed in the forefront via these meetings (Fullan, 1982; Taylor, 1993).

The continuation of such an effort toward looking at such curricular change will necessitate an on-going yet delicate blend of leadership support and continued self-examination and assessment by the participants as well as the system itself. A certain amount of discord is probable (as was the case with this project) and indeed healthy; therefore, this writer would not have changed the process if this project was to be replicated. Discord to an extreme can upset the collective vision, that is, curricular and instructional change in this case (Donaldson, 1994; Fullan & Miles, 1991). It will be too easy to go back to old behaviors and beliefs; with this in mind then, the full realization of this challenge may take time, since changing human behavior necessitates that time is taken

to observe and understand the fears that the staff members responsible for that changing curriculum might have (Fullan & Miles, 1991; Sadowski, 1992).

Recommendations

This effort should be regarded as a major step toward looking at curriculum in perhaps a more creative yet alternative way. Educators need to continue to talk to others within the professional day-to-day lives about the need to raise standards and be accountable to the students as well as to the community and ultimately society as a whole. This need not be a threat but should be regarded as an invitation. A discussion of the fact that much of the good teaching that has already been done can and should be continued; some educators are not implying that this type of curricular redefinition is a "new fad". However, the need to look toward continual improvement, since societal and workplace expectations have changed, should be openly discussed.

With this in mind, commitment of time for staff members and teams to communicate, network, and discuss what has already been done, sharing assessment methods to determine the effectiveness of different strategies is of absolute necessity. For example, a framework, designated outcomes and standards as well as a foundation of sample units were developed through this project; more classroom-based units can be added through

strategic planning and networking of staff district-wide. These resources can then be used in other classrooms to assess whether students' multiple intelligences and thinking skills are indeed being tapped through quality learning and teaching, to what extent and to what degree of effectiveness. This has begun already in the commitment toward collaboration meetings at one of the buildings in the district; the administrative team is working on how to expand this effort Kindergarten through Grade 5.

In addition, professional development opportunities need to be continuous and on-going; we cannot afford to become complacent. These may take the form of on-site courses and other seminars and workshops with a very specific focus or set of goals. As a result of the training component with Dr. Taylor during this project's implementation and dissemination of information related to the training seminar, almost the entire staff at one of the schools has indicated an interest to participate in the same training. Subsequently, the district has registered 33 staff members for a seminar this summer with Dr. Taylor in redefining curriculum using multiple intelligence theory and higher order thinking as well as problem solving skills to develop challenging student outcomes.

This professional development should not be confined to coursework and workshop attendance only,

however. The importance of team teaching, peer observation and evaluation as well as mentoring programs are equally as important as formal coursework. In reality, the type of professional development is based on the 'style' or 'intelligence' of the adult learner just as it should be with the students we teach!

Dissemination

There has been on-going and, at times, sometimes intense communication with all staff members in Kindergarten through Grade 5 since the beginning of this project. At the conclusion of its activities, the core topic framework, philosophical overview and student outcomes for each of the core areas was disseminated to all staff members and administrators Preschool through Grade 8. As well, three copies of notebooks containing this same information as well as exemplary integrated interdisciplinary units for many of the topics in addition to other areas outside of the core curriculum have been located in each of the school buildings in their respective Learning Centers, staff rooms and main offices. This writer had met with the staffs of the school buildings housing grades Kindergarten through Grade 5 to personally provide an overview of the final document, answer any questions (with Committee members from that building) and review the organization of the notebook with samples of interdisciplinary units.

In addition, copies of the curriculum were disseminated to those parents and community members present at the School Board meeting where the final document and products were discussed. A notebook containing the curriculum has been placed at each of the parent entrances at each of the school buildings; initially, the intent of this was to gather evaluative data for this project, but it will remain in order to continue to acquire on-going feedback as well as to maintain open communication with parents so that they may assist in supplementing experiences that their children may have within the instructional framework of the core topic areas.

Finally, it is hoped that the dissemination of the work completed by this project will continue with others, both within and outside of the school district, and will only be the beginning of classroom based curriculum design which continues to strive for learning by students that is of the highest quality. It is believed that this type of curricular design is one of the most innovative and progressive. Since it is unlike previous curricular standards and documentation, its presentation to other colleagues in the field (i.e., state and national conferences) for continued collaboration and discussion will be of great importance (see Appendix P). It is the 'best practices' that are achieved through this effort that will act as the

springboard for future directions so that all involved may continue to celebrate superb teaching and performance of the highest standards for children.

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APPENDIX A

Orientation Day Information

Reporting Information from September 3, 1992 Orientation Day
District-Wide Groups

1. What resources should we be asking for next year (i.e., workshops, courses, financial resources, etc.) in order to understand and develop multi-year plans that look towards our needs and future trends that will best prepare our students?

- workshops regarding technology (sharing among staff)
- parenting workshops
- monitor resources to nurture innovative programs and ideas
- investigate how we deliver educational services (does our philosophy match the current fiscal reality?)
- community-based parenting education, perhaps tied to early education initiative
- more computers for elementary classrooms
- software management regarding grading and evaluation of classes
- longitudinal studies on students (academically, social/emotionally, etc.)
- reevaluate curriculum in the district
- survey high school parents and teachers to determine strengths and/or weaknesses of K-8 program
- fund a grant writer (with input from community and school personnel)
- university involvement
- business involvement
- consider two Kindergarten through Grade 5 buildings

2. How can we best unify the three buildings in the district and maximize the coordination of curriculum: What do we need in terms of workshops, inservice activities and committees in order to improve our communication and coordination?

- time for meetings between school buildings (meetings to discuss goals, differing roles of colleagues and general perceptions)
- have a building liaison at each building to communicate among buildings via a District-Wide Committee/Forum
- look at alternative ways to decrease competition among buildings
- determine retention philosophy across the district
- submit a curriculum or unit sheet at the end of the year to review themes, curriculums that were addressed, etc.
- arrange meetings among teachers with similar content areas across the district
- communication on policy district-wide
- rotate groups of district-wide staff members for inservice
- building to building grade levels to meet (e.g., Grades 2 to 3, Grades 5 to 6, etc.) to discuss themes and projects done in order to avoid repetition
- job exchange
- family curriculum night
- adopt a business program

- teacher outreach and community service
- other teacher's visiting other classrooms (visiting day)
- communicate personal strengths and areas of expertise
- district-wide course work and workshops
- informal projects or activities which celebrate district as a total unit
- activities which would include children from different buildings
- consistent feedback from teachers regarding on children's progress
- theme day district-wide with cross-age groups (e.g., science day, language arts day, sharing portfolios, etc.)
- problem solving activities involving district-wide staff (e.g., wilderness ropes course)
- community project with district-wide represented group

3. What are the advantages and disadvantages of having greater ranges of grades in each building, (i.e., Preschool through Grade 5 in one building, Grades 5-8 at the Middle School, etc.)? If the "pros" outweigh the "cons" what do you feel we would need in order to accomplish this goal?

Pros
- K-5 or K-4 programs can provide better communication
- better consistency in curriculum
- good role models to use for peer tutoring in developing compassion
- less competition among grade levels in buildings
- greater flexibility if another building is constructed
- more opportunities for multi-age grouping
- greater socialization
- allow kids to be kids
- greater and longer parent ownership of schools
- fewer transitions for students as well as parents
- allow teachers and students exposure to entire developmental range of students
- allow for more continuity of services, personnel, Special Education and guidance

Cons
- a configuration of Grades 5 to 8 would be difficult for 5th graders because of maturation and exposure to 8th graders
- possible negative experiences or inferences by older students
- difficultly retrofitting buildings to accommodate a greater range of children
- dances would be to early for 5th graders
- possible breakup of current teams
- initial problem of material duplication

Ideas
- invite a School Board representative and/or superintendent to lead a forum about this question
- investigate and visit other buildings with a wider range of grade levels

4. How can we best establish partnerships with parents, the community and private enterprise? What type of workshops and activities would assist us in the next year in promoting this?

- establish home visits
- workshops in the evening
- guidelines for teachers to talk with parents
- after school homework club
- parent support in the home itself
- parent involvement with school projects in school
- a memo from the Principal home each week
- use of parents during thematic units
- on-going relationships with private business
- teacher internships in business communities
- use school buildings as social places for community programs
- computerized phone system
- news letters
- volunteers to speak or seniors to volunteer
- career day
- teacher outreach for community and business
- computer modem with businesses
- summer institutes
- expand community service
- job exchange (teachers with community and business)

5. What do we want our schools to look like in the 21st century? What are some short- and long-term activities or workshops that might be presented for us to begin to move towards that end?

- computer and technological expansion
- a coordination among technical education, science and math
- insurance that there is a funding source for this technology
- computer compatibility
- "Project Assist" project to form partnerships with businesses
- business persons and businesses to act as individual student mentors
- daily wellness/healthy activities
- school year restructured
- balance between technology and the arts
- continue "Discipline With Dignity" coursework
- school as the community center involving health, social services, recreational facilities, libraries, etc.
- schools that involve children and families from birth throughout the life cycle
- funding completely restructured
- partnership with industry
- technology to be a <u>part</u> of effort: there must be a "balance" between technology and good instruction by teachers (future speakers might involve looking at future demographics, speakers from industry such as Ed Barry from Milton, etc.)
- Pilot projects to "test waters" so that models can be built (Success by 6, Baltimore schools taken over by private industry, etc.)

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6. How can we best integrate technology into all curricula areas? What types of workshops and inservice presentations are we in need of for staff and administration to work towards the greater integration of technology into the curriculum?

- more time for kids to use technology in the upper grades
- priority placed on basic skill areas in the earlier grades (reading, problem solving, following directions, logical thinking, math) in order for them to have a foundation for them to learn the technological skills
- don't use technology to much so that it is off balance with other areas (e.g., social skills)
- general exposure of technology to students in order to make connections for them
- allow adequate time for training
- choose software programs that are time efficient and beneficial to students
- take care on how quickly we integrate technologies since the field is changing rapidly
- integrate business or community into technological areas in the school (for training and/or work with students)
- have realistic goals for technology
- make sure that we establish specific goals for technology and simply don't "do technology" for technology sake
- ensure that there are resource people in the schools to assist in training and opportunities
- have staff visit other schools that are integrating technology into curriculum

7. The term "collaboration" seems to be turning into the current "buzz word." What is your definition of the term "collaboration?" Do you believe it has a place in education today? What do you believe are advantages and disadvantages to people joining forces in some capacity: If people are to work more closely together, do you believe there is a need for workshops on group dynamics, team problem-solving and interpersonal skills?

<u>Obstacles to Collaboration</u>

- distance between schools
- different time schedules
- different program structures
- lack of continuity in terms of methods used to teach the curriculum
- not knowing players from other buildings
- no opportunities to <u>communicate</u> among buildings never mind <u>collaborate</u> between buildings!
- people are unaware of group dynamic skills and team problem solving skills
- large numbers of people create difficulty in communication/collaboration

Ideas to Increase Collaboration

- a chart that designates a sequence for all curricular areas and/or an integration of curriculum
- one staff meeting a month district-wide to share ideas, projects and directions
- have regular meetings with designated representatives from each building to speak about concerns
- provide inservice and training for how to conduct meetings
- provide vehicles for continuity in structuring instruction and themes from one grade to another
- provide workshops and collaborative discussions regarding specific subject areas and how to teach those subject areas across grades
- teacher exchange program from one building to another
- during district-wide meetings provide name tags with name, position and building
- provide workshops and professional development activities on interpersonal skills and adult development
- understand constructivism: "that reality is constructed in your mind - the truth is what you make it"

8. How can we improve and/or intensify math and science instruction district-wide without feeling that we are "adding on?" What types of professional development activities or outside resources do we need to assist us in this effort? Are there ways to establish partnerships with higher education, private consultants, governmental agencies, etc. that can also help us to help our students?

- increase communication among math/science teachers in order to cut down on overlap
- incorporate math portfolios into curriculum
- provide increased professional development opportunities in the areas of math/science
- rewrite curriculum
- provide greater teaming opportunities to integrate curricula: make sure professional development opportunities are available to know <u>how</u> to integrate curriculum
- integrate science and health curriculum
- committee of teachers to meet district-wide to increase communication efforts
- allow students to rotate among different teachers who are teaching different science units
- have teachers make a list of subject areas and units they have effectively taught so that it can be shared with other professionals
- integrate social studies, science and health curricula
- hire consultants to rewrite curricula
- provide inservice regarding portfolios
- realize that it takes time to implement change
- provide models for successful curricular changes and integration efforts
- utilize businesses to assist in giving ideas regarding integration of different curricular areas
- provide a survey of courses and workshops taken by current staff and rate them. Then share that information.

- survey the specific needs of the staff so that professional development opportunities can be consistent with those needs
- provide a resource list of teachers in the district who are integrating science across curricular areas so that they could be used as a resource
- share copies of successful units in a central location
- make a master list of K-8 units and materials and share district-wide
- utilize our staff to conduct workshops
- sharing sessions district-wide

APPENDIX B

Concerns Regarding Curriculum Overlap

Feedback from Inservice Day November 25, 1992
Curriculum Overlap Pre-K to Grade 4

What are the issues?

- Duplication of themes. To what depth do people explore a theme?
- No sequence in curriculum that lets things be built upon especially in science and social studies.
- Overlap between science and social studies with no logical sequence from grade to grade.

How do we fit into the "core" curriculum?

- Curriculum needs to be more specified so that Special Education services could better help their students.
- Scope and sequence for all curriculum areas. Curricula are too open; they need to provide "target" skills.
- Some curricula are very repetitive. Look at other district's curricula (i.e., East's skills sequence for Language Arts, science).
- No records available to show what units students have previously experienced.
- What are students missing because of duplication?
- Appropriateness of concepts to age level is questionable.

Ideas

- Organize the entire curriculum around science rather than language arts.
- Curricula has to include both process and skills.
- Each curriculum has too much: less is more. Students don't have time to get into the subject.
- Themes need to be fewer; there needs to be more emphasis on processes, not facts.
- Some grade levels have too much content to be covered in one year (i.e., 5th grade); there also seems to be a big jump in content between Grades 4 and 5.

Feedback from November 25, 1992 Inservice Day
Curriculum Overlap Grades 5-8

Positive Feedback on Curriculum

- Science curriculum is succinct and easy to follow in Grades 5-8.
- Individual teachers have a great deal of strength and expertise in the content areas; perhaps this could be used to the district's advantage in restructuring efforts?

Needs and Concerns

- Unwieldy curricular documents; there is no true "framework" for instruction.
- To much freedom in topic choice within content areas; consistency in social studies and science curricula in Grade 5 is questionable (e.g., a geology unit is occurring currently in Grade 5 and this is an area that is not in the curriculum).
- Teacher interest and expertise do not "equal" the curriculum documents.
- Literature units and titles are oftentimes duplicated and triplicated through the grades.
- Minimal grade level communication occurs, either within the buildings or among the buildings within the school district.
- Inconsistency between 4th and 5th grades in social studies curriculum.
- Principals do not know who is teaching what; there is no accountability as it relates to the curriculum.
- Great numbers of teachers are teaching content areas subjects (i.e., teachers who previously taught science are now teaching social studies, etc.)
- There are "informal" exceptions to the written curriculum made by administration, thereby creating automatic inconsistencies.
- Many world changes have and continue to occur since the particular documents have been written. Does this mean there should be a shift in approach without giving up content?
- Social studies skills are simply not happening (i.e., students do not know the town, county, state, etc. where they live; students do not know how to read a map, etc.)

(over)

- Students lack independent skills; they do not have the basic understanding of geography or the knowledge to assist them in general life skills.

- There is too much emphasis on self-esteem without a knowledge base.

Ideas for the Difficulties as Noted

- Perhaps certain literature titles should be designated for certain grade levels in order to "refine and define." This might be less confusing for the students as well as the teachers!

- Simplify the curricular documents; provide a scope and sequence of skills as it relates to mastery, including checklists and guidelines. Develop and maintain a core in the curriculum in order to emphasize consistency, for the long-term benefit of the students. If there is time, supplemental themes and units can then occur.

- Develop some baseline data (on current Kindergarten class, for example) to determine improvements objectively throughout the course of several years (i.e., track one class for a period of time).

- Teacher to teacher communication regarding subject matter and possible solutions. Perhaps the March Inservice could provide that block of time in order for communication to occur, both among teachers related to subject as well as across grades.

- Keep it simple.

APPENDIX C

Rules of Conduct

Rules of Conduct

Curriculum Committee K-5

OPEN MIND TO NEW CONCEPTS

CHALLENGE IDEAS, NOT PEOPLE

NO CRITICICM OF COLLEAGUES

RESPECT FOR OTHERS

NO PUT-DOWNS

MAINTAIN GOALS THAT ARE CHILD-CENTERED

APPENDIX D

Survey Form of Current Practice

K-5 Curriculum Committee
Survey via Personal Interview

Person Interviewed (use initials): _____ Grade: _____

What are the areas in Social Studies and Science that you will be covering this year (or had covered last year, if you were at the same grade level):

_____

_____

_____

_____

_____

_____

What are (or will be) your major topics, units or themes in this effort?

_____

_____

_____

_____

_____

_____

How much time do you feel you will devote (or have devoted) to this area?

_____

_____

_____

_____

_____

_____

_____
initials of interviewer

APPENDIX E

Survey Information

Survey Results
Curriculum Themes K-8
Science/Social Studies

Kindergarten

- o plants and soil; trees, seeds
- o time, seasons, weather, animals (hibernation/camouflage)
- o weather
- o earth day: precycling, recycling; composting
- o self and community
- o magnets
- o holidays
- o transportation (how machines work)
- o peace and friendship
- o harvest (foods grown in)
- o farm animals (hatching chicks)
- o insects
- o Act 51

Grade 1

- o living things: bears, insects (intermittently)
  - dinosaurs
  - night animals
  - snails
  - pets
  - farm animals
- o senses
- o seasons
- o peace and friendship
- o plant and gardening
- o light
- o push and pull
- o magnets
- o holidays
- o transportation
- o recycling
- o motion (gravity/friction)
- o batteries and bulbs
- o water/ice/snow
- o bubbles

Grade 2

- o ponds
- o worms
- o all about me
- o native Americans (woods, plains, northwest, southwest)
- o weather
- o human (nutrition, senses)

- o animals and winter
- o solar systems
- o insects
- o winter
- o ancestors (exploring one's roots)
- o sink and float
- o pilgrims
- o birds of prey
- o pioneer life
- o (capitals, maps, counties, borders)
- o community
- o holidays
- o peace and friendship
- o globes and maps
- o early
- o oceanography
- o medieval times
- o physics (batteries and bulbs, water, balls in motion and as they relate to gravity, force, Oobleck)

Multi-Age

K-1
- o self and others
- o nature (ponds/trees)
- o chicks
- o recycling
- o friends (school adjustment)
- o time/seasons
- o peace/friendship
- o snow (as it relates to literature)
- o farm
- o colors
- o growth and change
- o night and day
- o oceans and marine life

K-2 Multi-Age
Year 1
- o oceanography
- o dinosaurs
- o Native Americans
- o Plymouth
- o ancestors (countries of origin)
- o self-esteem
- o sink or float

Year 2
- o apples
- o magnets
- o motion
- o transportation
- o peace and friendship
- o community/community helpers

Year 3
o human body (senses, circulation, respiration, skeletal, digestion)
o plants
o nocturnal animals
o snakes/wolves/bears

1-2 Multi-Age
Year 1
o solar system
o colors
o fall harvest/market
o pilgrims/Indians
o early American life
o animals in winter (tracking/hibernation)
o rocks and minerals
o birds

Year 2
o maps and globes
o friends
o apples
o human body
o nutrition
o holidays
o oceanography
o magnets
o plants/seeds

Grade 3
o colonial communities/transportation
o maps skills
o international communities
o life cycle of plants
o heat, light and sound
o simple machines
o water cycle
o mammals in winter
o food chain
o healthy body (Zardip, ETV)
o harvest
o habitats
o land forms (in conjunction with water cycle)
o ecosystems (forests, tree identification, adopt-a-tree)
o communities (general and regional)
o current events (elections, consumerism)
o conservation, environment

Grade 4
o endangered species
o oceanography
o electricity and magnetism
o matter
o maps and globes
o geography
o orienteering

- homeless
- peace and friendship
- forests
- MLK junior
- current events (elections)
- geology
- Black history
- pilgrims (holiday studies)
- physics (law of motion)
- human body (wellness)
- news reporting
- deserts

Grade 5

- botany
- geology of
- chemistry (chemical and physical change)
- human body and disease
- history of science/great scientists (inventions)
- weather
- original (Native Americans)
- history
- paleoanthropology
- artifact museum
- three D model of landscapes
- science fair
- integration
- regions of the United States
- solar systems
- map skills/geographic terms
- current events
- Black history
- DARE
- decision making
- lost plant studies/leaf collection
- plants

Multi-Age Grades 3-5

Year 1

- universe and solar system
- weather
- 50 states in the United States and

Year 2

- rocks and minerals
- endangered species
- geography
- history

Year 3

- oceanography
- electricity and magnetism
- regions (forests, oceans, manufacturing)

Multi-Age Grades 3-4

Year 1

- o ecosystems
- o water cycle
- o heat, light and sound
- o international communities
- o cities
- o endangered species
- o oceans
- o matter
- o electricity and magnetism
- o geography and geology
- o special projects and themes
  - adopt-a-business
  - unsheltered lives
  - older and wiser
  - castles
  - Museum/Raptor Center trip

APPENDIX F

Request for Input on Initial Draft of Core Topics

WE KNOW YOU'RE BUSY, BUT PLEASE READ THIS!!!

As you know, the K-5 Curriculum Committee has been working on the overlap of units and themes taught in social studies and science from grade to grade. Although many of you are aware of what we have worked on to date, we are now in a position to gain additional input from you before we continue our efforts.

THE ATTACHED IS A DRAFT FOR A CORE OF UNITS THAT WOULD BE TAUGHT K-5. EACH TEACHER WOULD BE RESPONSIBLE FOR TEACHING THOSE UNITS SPECIFIED FOR HIS/HER GRADE LEVEL. IF A TEACHER CHOSE TO DO ADDITIONAL TOPICS (AS MANY WOULD), THEY WOULD NEED TO BE AREAS <u>OUTSIDE THE CORE</u> SO THAT REDUNDANCY AND REPETITION FOR STUDENTS IS MINIMIZED.

The intent of this draft is to decrease replication of content and themes for children as they progress through the grades (concerns that were brought up this year during our Orientation activities as well as our Inservice Day in November). This effort is therefore <u>not</u> intended to limit any teacher in their efforts to challenge our students. It is important, however, to insure continuity in themes among grade levels for students and parents as well as ourselves.

We still have a bit of work to do: we need to cross reference further the Health Curriculum in order to integrate areas that blend in with the core units; we need to be more specific in the areas of physical and chemical science at the Elementary level; and we need to more formally identify some concrete activities and content under each of the units designated. If the work progresses as we hope it will, it would be our intention that this sequence be piloted , and that revision occur at the end of that time via input from professional staff. We cannot, however, continue without feedback from you!

Since we will be meeting all morning it is very important that you give your input to any one of the Committee members (either in person or in writing).

Thanks!

<u>Committee Members</u>

	Social Studies Areas	Science Areas	Other (Health)
5	International Studies	Physical & Chemical Change Weather Environmental Issues	Disease Prevention D.A.R.E. Reproduction, Circulatory & Respiratory Systems
4	United States	Oceans Electricity Endangered Species	Peer Pressure First Aid Digestive & Skeletal Systems
3	Vermont	Vermont Animals & Habitats Geology	Self & Others Personal Health Habits Safety
2	Community	Animals Forest Animals Human Body Function of Body Parts (i.e., heart, blood, Slim Goodbody) Water Properties of Water (solid, liquid, gas) Surface Tension Other Life Insect Communities Plants Trees	
1	Families	Animals Zoo Animals Human Body Nutrition & Food Water Bubbles Other Life Pond Life Plants Gardens	
K	All About Me	Animals Domestic Animals Human Body Body Parts (outside i,e., nose, head, etc.) Water Sink/Float Other Life Lower Life Forms (worms/spiders) Plants Seasonal Changes	

DRAFT

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APPENDIX G

Final Draft of Minimal Core
Topic Framework Overview

Overview of K-5 Curriculum Committee

The attached is a draft of the work done thus far by the K-5 Curriculum Committee. As you know, we have made an attempt to look at the challenges that were before us, to create a system that would assist teachers and, more importantly, continue to meet the needs of our students in as many ways as possible.

The attached is therefore a DRAFT of minimal core curricula topics in Science and Social Studies that would be taught K-5. Each teacher would be responsible for teaching those units specific to his or her grade level. If a teacher chose to do additional topics (as many hopefully would), they would need to be areas outside the "core" so that redundancy and repetition for students is minimized.

WHY WAS A CURRICULUM COMMITTEE FORMED IN THE FIRST PLACE?

If you recall, there were several questions that were a part of our Orientation Day on September 3, 1992 which involved staff district-wide generating ideas about how we make a good school system even more excellent. One of the questions was how we might improve math, science and other content instruction district-wide without feeling that we were "adding on." Many comments were recorded; however, many of them indicated the need to: integrate social studies, science and health curricula; create a master list of units, themes, and/or materials that could be shared district-wide; and increase communication in order to maintain some degree of consistency between grade levels. As well, it was suggested that some type of accountability be determined (e.g., a curriculum or unit sheet attached to the progress report) to review specific themes and curricula that were addressed during the course of that school year i.e. that receiving teachers were aware of what students had experienced in the past.

During our November 25, 1992 Inservice Day, we had two workshops that discussed the curriculum overlap concerns within the district. In brief, many of our staff were concerned about the lack of cohesiveness in order to ensure some continuity for students; at the same, flexibility and creativity in instructional practices needed to be maintained and even expanded. More importantly, the concerns regarding students missing some foundations within the curriculum were expressed by staff members as well as community members. There appeared to be a lack of a minimal skeletal framework for instruction made even more difficult by the number of curricular documents that we had (if you would like more detailed information, please ask for the raw data from these Inservice Days).

As a result, a K-5 Curriculum Committee was formed.

WHAT WAS THE PRIORITY OR CHARGE THAT THE COMMITTEE DECIDED FOR A FOCUS?

In a nutshell, the Committee felt that there was the need to bring some type of coherence, consistency and accountability for student learning as children moved through our school system. At the same time, it was felt that there was also the need to allow flexibility for innovative programming efforts to occur that would, once again, match the needs and the challenges that our children provided for us.

We therefore decided to focus on the Science and Social Studies curricular areas.

WHY WAS THE COMMITTEE K-5 AND NOT K-8?

Because of time constraints and the size of the project, it was determined that starting small and creating a firm foundation to build upon was the first step.

WHAT INDICATORS SUPPORTED A LACK OF COHERENCE AND CONSISTENCY?

As mentioned already, many staff members voiced concern about the curricula being very repetitive across grades. As well, there were some questions as to the developmental appropriateness of some concepts in the areas that were identified in our current Science and Social Studies curricula. Concerns about the duplication of themes and the lack of depth that students were able to explore were oftentimes expressed.

Parent and community comments reported similar concerns about the duplication and triplication of units, sometimes resulting in parents requesting a totally different curriculum of a teacher because of subject redundancy (i.e., "My child had that already in the previous two grades!").

In addition, the administration and school board, while reviewing the need for data collection and longitudinal studies, felt that a system of accountability had to be a part of any effort to determine what "quality indicators" measured the success of our students.

HOW CAN THIS MINIMAL "CORE" CURRICULUM BE FLEXIBLE WHEN CONTENT IS IDENTIFIED?

We are not making an attempt to determine which is more important, process or content: it is clear that both are necessary in order to meet the unique needs of our many students.

In the draft that is provided, core curricula are identified as a minimal skeleton; each will be done in depth so that our students can move as far in a specific area of interest within that unit, as possible. Content and processes will be modified, if necessary, for students in need. It is hoped that innovative curriculum units will be developed and shared by staff members. (Don't forget, Chapter 2 and Eisenhower grants will be available to assist in funding these creative ideas!)

Remember, the goal of the Committee is to provide a <u>minimal</u> developmental foundation in order to create curricular coherence while maintaining flexibility for innovation.

Although topics are maintained at designated grade levels, instruction beyond the minimal core is encouraged (as long as the core is completed and accounted for!).

IF "SEASONAL CHANGES" AND THE WATER CYCLE IS A CONCENTRATED TOPIC IN KINDERGARTEN, AND A CHILD BECOMES CURIOUS ABOUT WEATHER AS A RESULT (WHICH IS CERTAINLY PROBABLE), SHOULD THE TEACHER IGNORE THAT INQUISITIVENESS, SINCE "WEATHER" IS NOT A CORE TOPIC UNTIL GRADE 5?

Absolutely not! This is not an "either/or" document: topics are identified at grade levels for an in-depth study. We all know that learning is constant; to deny a curious child access to information if it happens naturally as a part of instruction is wrong and INCONSISTENT with the Units identified at designated grade levels are meant to be a concentrated study within those areas only. "Teachable moments" are exhilarating and should continue. However we are asking teachers to be respectful of the fact that the topic in this example ('weather'), will be taught in depth in a future grade.

HOW DOES THIS RELATE TO EDUCATION IN THE 21ST CENTURY AND/OR VERMONT'S CORE CURRICULUM?

Specific areas that are identified in Common Core include an emphasis on communication skills, wellness, citizenship, reasoning and problem solving. It is clear that the instruction that occurs within each of our topics can and should establish goals that are consistent with these areas. For example, skills involved in communication and cooperative relationships might be a part of the study of "families" in Grade 1 by discussing family traditions, communication among members of different families, accepting and appreciating new ideas that family members might generate, etc. Problem solving difficult situations even in the context of "families" provides a foundation for future collaboration and prerequisite skills for cooperation and citizenship in our society.

THIS DOCUMENT IS ONLY A BEGINNING. WE FEEL IT PROVIDES THE "GLUE" TO KEEP A CONSISTENT CURRICULAR FRAMEWORK TOGETHER WHILE STILL PROVIDING A GREAT DEAL OF FLEXIBILITY FOR CREATIVITY AND INNOVATION.

APPENDIX H

Questionnaire:
Kindergarten through Grade 5
Staff Meeting

FEEDBACK AND INPUT FROM STAFF MEETING

K-5 CURRICULUM COMMITTEE WORK

Rules of Conduct at Open Session

- Each person will be allowed no more than two questions or comments at a time.
- There will be no put-downs; questions for clarification and input should be accepted as constructive.
- If time runs out, input and comments should be submitted to any one of the Committee members by .

1. What specific questions or concerns do you have about the designated core that have not been answered by the document itself?

2. Do you have any specific recommendations for successful implementation of this proposal?

(over)

3. What else is needed for professional development and training that has not been designated already by the document?

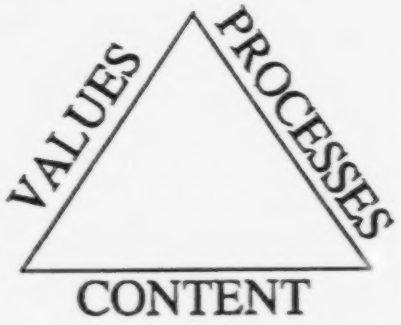
This Curriculum Committee strongly recommends that there be regular monthly collaboration sessions among grade level teachers. It is only through this type of discussion and sharing that more specific outcomes and goals can be determined district-wide Kindergarten through Grade 8. It is important that these cooperative working groups specify and develop strands of knowledge necessary for developmentally appropriate instruction around specific instructional units.

APPENDIX I

Final Overview and Minimal Core Topic Framework

K-5 Curriculum Committee
Overview

Curriculum Development and Assessment has always been a controversial topic; however, with the significance of the changes in our schools as well as in society, alternative ways of looking at curriculum as well as assessment is of primary importance. Clearly, it is necessary that we define our "values" when we educate our children; in large part, these values are designated in the Essex Design for Learning. In addition, however, we also need to define the processes that students must have in order to ultimately reach designated goals (these goals or outcomes are based on our value systems). Oftentimes, the vehicle for implying these values and teaching these processes are within specific "content" materials.



"VALUES"

Values should be emphasized in all instruction and at all grade/age levels. Some of those that are considered most important will include:

- Understanding the past and its relationship to the present and the future (sociologically, economically and politically).
- Understanding the diverse social framework of all institutions (including families, government and other cultures) and the interdependence of its parts to each other.
- Understanding the environment and the importance of that environment to the quality of our lives.
- Understanding the importance of communication (spoken, written, and symbolic).
- Understanding the value of the arts and the aesthetic disciplines.
- Understanding the importance of commitment and purpose in everything that we do.

"PROCESSES"

As we know, processes are made up of specific skills that are applied so that our students can learn how to learn. Once again, these processes must in many areas be a part of all instruction at all levels and would include:

- o Higher order thinking, which includes decision making, investigating and problem solving abilities.
- o Communicating, including speaking, listening, reading, writing, composing, creating, cooperating, collaborating and performing.

"CONTENT"

Units are often designed around thematic areas. Within instruction itself, several disciplines are oftentimes incorporated around a unit of study; specific content acts as a vehicle or a foundation from which values and processes are taught. Concepts are focused upon within these study areas in order for students to utilize the processes mentioned previously but, as well, to provide a depth of knowledge and understanding about specific areas. Unfortunately, in some cases, this knowledge has been thin and superficial, since instruction has previously emphasized coverage of large quantities of curriculum material. It is of absolute necessity that knowledge is deep in order for central processes and values of a topic or discipline to be understood.

It is this area of 'content' that the K-5 Curriculum Committee wanted to address, certainly without losing the importance of values and processes that need to be emphasized in all instruction. Assessment to determine if this "blend" is successful for our students is just as important as the framework itself. As well, insuring that a range of instructional methodologies and techniques are available to all students for their success must be a priority. Assessments of all these areas can be accomplished through direct observation, student portfolios and work, interviews with students and staff, staff discussions, shadow studies, and other methods of data collection.

> "The ultimate assessment is an evaluation of how any given activity, whether traditional or innovative, in or out of school has engaged students in using there minds well." (Newmann and Wehlege, 1993)

K-5 Integrated Science/Social Studies
CORE CURRICULUM

Grs.	Social Studies Areas	Science Areas	
(6	International (recommended only; yet to be studied)	Heat/Light	Ecosystems)
5	United States	Physical & Chemical Properties & Change	Weather/Climate
4	Vermont	Geology	Endangered Species
3	Chittenden County and Lake Champlain	Simple Machines	Solar System/ Universe
2	Essex Community	Electricity	Animals
1	Families	Magnets/Motion	Plants
K	All About Me	Five Senses (Science/Health)	Water/Seasonal Changes

APPENDIX J

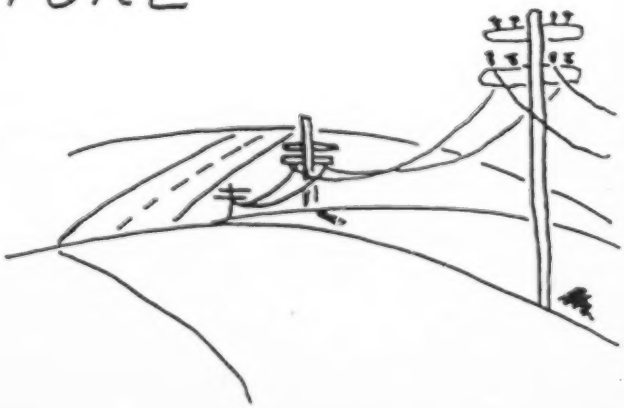
Integrated Interdisciplinary Unit

"SOCKET TO ME, BABY ⚡⚡"

WIRE WE HERE?

AN INTEGRATED INTERDISCIPLINARY STUDY OF ELECTRICITY AND ITS EFFECT ON COMMUNITIES: PAST, PRESENT & FUTURE

BY:



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APPENDIX K

Student Outcomes for Topic Area

K-5 Integrated Science/Social Studies
CORE CURRICULUM

Student Outcomes
Batteries, Bulbs and Static Electricity - Grade 2

CONTENT

Students will gain a basic understanding of electricity, when it was first used and how its use has shaped the development of communities.

Students will understand how to produce electricity by making simple batteries as well as using commercial batteries.

Students will learn that electricity can be produced through friction (static electricity).

Students will learn how to measure electricity they produce in the classroom.

Vocabulary
(Review 1st grade vocabulary from Magnets/Motion.)

BASIC
- battery
- meter
- conductor
- motor
- incandescent light
- fluorescent
- lightning
- thunder
- sparks
- bulb
- static electricity
- shocks
- fuses

MAGNETS
- magnetic field
- magnetic force
- repel/attract
- resistance
- electromagnetic

TEACHERS' VOCABULARY
(preparation for children who ask!)
- charges (positive and negative)
- circuit
- conductor
- current
- electron
- watt
- neutrons
- protons
- semi-conductors
- short circuit
- atom
- light

PEOPLE
- Ben Franklin
- James Watt
- Thomas Edison
- Alexander Graham Bell
- Michael Faraday
- Allesandro Volta
- Andre-Marie Ampere

PROCESSES

Students will apply knowledge of electrical conservation and consumption to daily life, at home, in school and in the community. Students will apply their basic knowledge of electricity to its impact in the environment.

* Students will understand the need for proper safety procedures when working with any tools or games that use electricity.

* Students will understand the advantages as well as the potential hazards regarding electricity during special conditions, such as bad weather, darkness and Halloween.

VALUES

Students will develop a greater level of sensitivity for how electricity and its related technology influences the quality of life and the environment (saving time and money, etc.)

Students will internalize how electricity is an important part of their everyday lives today (during play, work, learning; its relationship to safety, nutrition, danger) and discuss implications for its use in the future.

All content, processes and values noted above must integrate the following science process skills into instruction on a regular and consistent basis:

observation
classification
measurement
data collection/extension, organization, calculation
experimentation
communication
evaluation

APPENDIX L

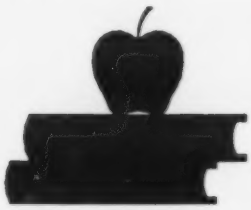
Overview of Integrated Interdisciplinary
Unit Titles for Reference and Use

Science / Social Studies

MINIMAL CORE CURRICULUM

Kindergarten through Grade 5

Overview, Framework, and Student Outcomes
March 1994



PLUS
SAMPLE INTERDISCIPLINARY UNITS
Kindergarten through Grade 8

CURRENT LISTING OF INTEGRATED INTERDISCIPLINARY TOPIC UNITS

March 1994

Grs	Science	Social Studies	Other
K		Families: One Size Doesn't Fit All	
1		Home is Where the Heart Is	
1		The Relatives Are Coming: From Goldilocks & the Three Bears to Mama's New Job	
	(all above are Integrated Interdisciplinary Studies of Families/Family Relationships)		
2		Our Community: From Sawdust to Turtle Fur (an Integrated Interdisciplinary Study of Communities, Then and Now)	
2	<————	Socket to me Baby, Wire We Here? (an Integrated Interdisciplinary Study of Electricity and its Effect on Communities) ————>	
1&2			A Very Hungary Caterpillar Crawls Through Charlotte's Web (an Integrated Interdisciplinary Study of Insects, Spiders and Worms)
3			

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(over)

Grs	Science	Social Studies	Other
4		Meets Verde Mont (an Integrated Interdisciplinary Unit on History from Samuel de Champlain to Ben & Jerry's) I'm a Yankee Doodle Born In 1971 (an Integrated Interdisciplinary Study of the History and Geography of)	
5	Trusting the Weather Man Can Be a Big Mistake (an Integrated Interdisciplinary Unit on the Weather)	Roots: Your Long and Winding Roadb (an Integrated Interdisciplinary Study of Family Heritage and American Immigration	
6			Do Bug Me! (an Integrated Interdisciplinary Study of Insects for the Middle School Student
7			Parlez Vous Francais: The French Connection (an Integrated Interdisciplinary Study of Neighbors to the North)
8			

APPENDIX M

Staff Evaluation Questionnaires for
Final Document

STAFF FEEDBACK/INPUT FORM

K-5 SCIENCE/SOCIAL STUDIES
MINIMAL CORE CURRICULUM

Framework and Student Outcomes
March 1994

The K-5 Curriculum Committee has worked diligently developing a minimal core framework and designated student outcomes and has valued your feedback and input over the last many months. With the final copy of the document now in place, we would appreciate your thoughts and ideas once again. Thanks for taking the time!

1. Do you have any specific additions, changes or deletions regarding the specific student outcomes on any of the designated topics?

_____

_____

_____

2. Do you feel the student outcomes are balanced appropriately among the three areas of 'content', 'values' and 'processes'? Why or why not?

_____

_____

_____

3. Do you feel that the designated student outcomes for each of the topic areas are developmentally appropriate for that particular grade and/or age level? Is there enough flexibility for allowing teachers to provide challenging yet appropriate instruction? Please be specific.

_____

_____

_____

(over)

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4. Overall general impressions.

_____

_____

_____

_____

5. Do you think that the availability of specific integrated interdisciplinary units regarding these topics will be useful to you? Why or why not?

_____

_____

_____

Name: _____ Date: _____
(optional)

Please return to Vanessa Phelan at the Central Office. Thank you!

APPENDIX N

Parent and Community
Evaluation Questionnaires

March 1994
Parent Feedback Survey
MINIMAL CORE CURRICULUM
Science/Social Studies
Kindergarten through Grade 5

1. Do you agree with having a minimal "core" of topics in Science/ Social Studies to provide some predictability, consistency and accountability?

___ Yes

___ No

Why? Why not? _____

_____

_____

_____

2. If you have reviewed the student outcomes, do you feel that the objectives are challenging yet appropriate to the designated grade level?

_____

_____

_____

_____

_____

3. Any other input that you feel is important can be offered here!

_____

_____

_____

_____

_____

_____

_____

Thank you!

APPENDIX O

Sample Activities
from Interdisciplinary Unit

CRITICAL THINKING SKILLS
(ACADEMIC)

AHA! Analyzing Human Activities

Producing, Exchanging and Distributing (Economic)

KNOWLEDGE

After viewing clips from the video Uncle Buck, list at least 10 examples of products that your family has purchased or machines that are a part of your community that use electricity to save time or money (eg. refrigerator, hair dryer, stove, microwave, clothes washer/dryer). List them on a flip chart.

COMPREHENSION

After listing products above, with a partner choose one electrical appliance or machine that you have identified above and discuss how it has saved time or money (eg. a hair dryer saves time since hair can be dry in 5 minutes rather than 45 minutes, a refrigerator saves money by allowing food to be bought in bulk and kept for a longer period of time).

Report to the whole group.

APPLICATION

Make a bulletin board with drawings and pictures depicting what it would be like without the electrical appliance or machine and compare it with what it is like with it!

HIGHER ORDER THINKING SKILLS

Choose something in your life that is not electrified but you would like to see electrified. Create a prototype of it!

If you had to give up a refrigerator or a TV, which would you choose and why? (refrigerator for ice cream, TV with favorite programs). Draw a picture of how your family would change as a result.

Science

KNOWLEDGE

After reviewing and discussing The First Book of Electricity by Sam and Beryl Epstein, students will understand that electricity is made up many different things that do different things.(eg. electron, atom, positive charge, negative charge, attract, repel).

COMPREHENSION

Children will pretend that they are electrons in a battery. A wire has been hooked up to the battery as well as a bulb. Children will simulate through their movement the flow and direction of electrons.

APPLICATION

Students will play the game Pass the Electron (see Creative Hands-On Experiences by DeBruin).

HIGHER ORDER THINKING SKILLS

Using a burned out light bulb, examine the different parts of the light bulb, making a picture of what it looks like and then making a chart showing how electricity travels through the bulb.

Each child can then stand in the same position as the light bulb looks and have a partner trace the path of electricity through the person's body with a marker or a pointer.

Aesthetic Needs

KNOWLEDGE

After listening to audiotapes of Halloween and video clips from Fantasia or A Christmas Story, students discuss things that use electricity which create beauty or different types of feelings (eg. Christmas lights make you feel happy; at Halloweeen, noises from tapes make you feel afraid but flashlights make you feel safe)

COMPREHENSION

After identifying a holiday of choice, student will discuss the positive and negative impacts of electricity on their lives during that holiday (eg. lights on Christmas trees make children who are Jewish feel left out, candles on Menorahs make one feel warm and secure).

APPLICATION

What would it be like if electricity wasn't available during the holiday chosen? Make a radio show or a pop up book of the result!

HIGHER ORDER THINKING SKILLS

Using a framework from a song already known, create a new song for their favorite holiday, describing that day with or without electricity (chart the song framework applying cloze procedures)

APPENDIX P

Request Form to Acquire
Curricular Document

REQUEST FORM TO ACQUIRE CURRICULAR DOCUMENT

TO: Vanessa C. Phelan
Director of Instructional Programs
Essex Town School District
91 Allen Martin Drive
Essex Junction, Vermont 05452
(Phone) 802-878-9057

I would appreciate a copy of your Minimal Core Curriculum for Science and Social Studies, Kindergarten through Grade 5, including the Overview, Framework and Student Outcomes. I understand that there will be a copying cost incurred as a part of this request.

In addition, I agree to reference the Essex Town School District and Committee participants if I use the document in any way.

Sincerely,

_____ (name of person requesting document)

_____ (name of organization)

_____ (address)

_____

_____ (phone)